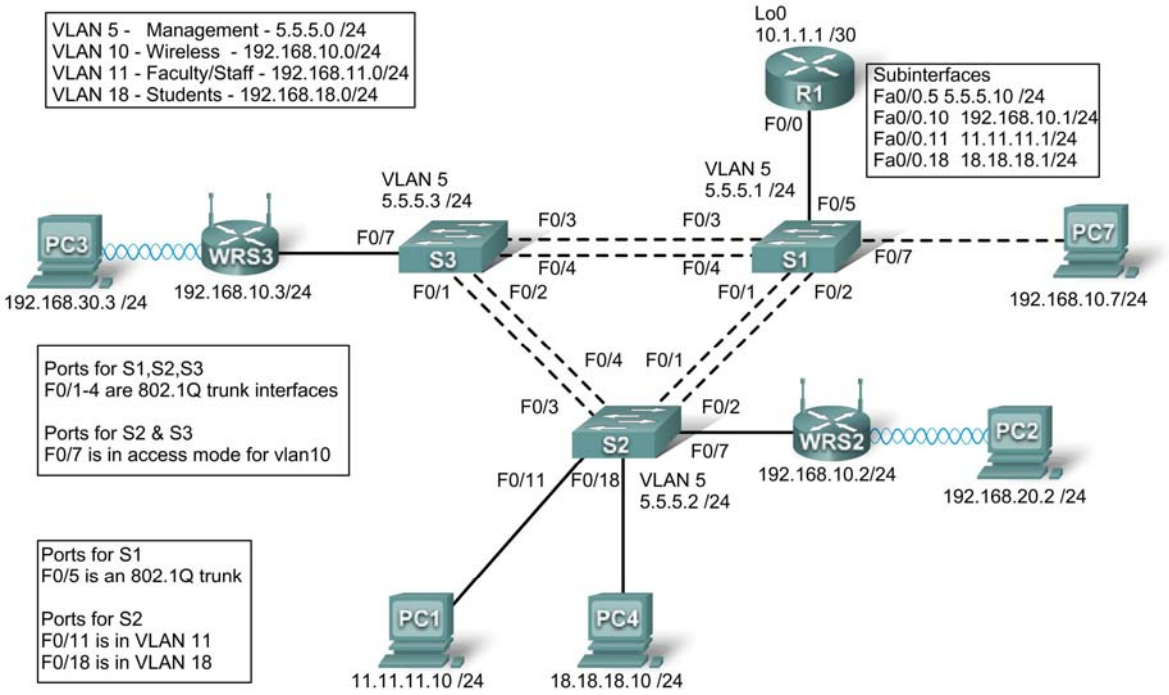
# Lab 7.5.3: Troubleshooting the Wireless WRT300N

## Topology Diagram




## Addressing Table

| Device | Interface | IP Address | Subnet Mask | Default Gateway |
|---|---|---|---|---|
| R1 | **Fa0/1.5** | 5.5.5.10 | 255.255.255.0 | N/A |
| | **Fa0/1.10** | 192.168.10.1 | 255.255.255.0 | N/A |
| | **Fa0/1.11** | 11.11.11.1 | 255.255.255.0 | N/A |
| | **Fa0/1.18** | 18.18.18.1 | 255.255.255.0 | N/A |
| | **Lo0** | 10.1.1.1 | 255.255.255.252 | N/A |
| WRS2 | **WAN** | 192.168.10.2 | 255.255.255.0 | 192.168.10.1 |
| | **LAN/Wireless** | 192.168.20.1 | 255.255.255.0 | N/A |
| WRS3 | **WAN** | 192.168.10.3 | 255.255.255.0 | 192.168.10.1 |
| | **LAN/Wireless** | 192.168.30.1 | 255.255.255.0 | N/A |
| **PC1** | **NIC** | 11.11.11.10 | 255.255.255.0 | 11.11.11.1 |
| **PC4** | **NIC** | 18.18.18.10 | 255.255.255.0 | 18.18.18.1 |
| **S1** | **VLAN 5** | 5.5.5.1 | 255.255.255.0 | N/A |

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| | | | | |
|---|---|---|---|---|
| **S2** | **VLAN 5** | 5.5.5.2 | 255.255.255.0 | N/A |
| **S3** | **VLAN 5** | 5.5.5.3 | 255.255.255.0 | N/A |

## Scenario

In this lab, a basic network and wireless network have been configured improperly. You must find and correct the misconfigurations based on the minimum network specifications provided by your company.

Here are the configurations to load into your router and switches.

### R1 Configuration

```
hostname R1
!
interface Loopback0
 ip address 10.1.1.1 255.255.255.0
!
interface FastEthernet0/1
 no ip address
 duplex auto
 speed auto
 no shutdown
!
interface FastEthernet0/1.5
 encapsulation dot1Q 5
 ip address 5.5.5.10 255.255.255.0
!
interface FastEthernet0/1.10
 encapsulation dot1Q 10
 ip address 192.168.11.1 255.255.255.0
!
interface FastEthernet0/1.18
 encapsulation dot1Q 18
 ip address 18.18.18.1 255.255.255.0
!
ip route 192.168.20.0 255.255.255.0 192.168.10.2
ip route 192.168.30.0 255.255.255.0 192.168.10.3
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
end
```

### Switch 1 Configuration

```
hostname S1
!
vtp mode transparent
!
vlan 5,10-11
!
```

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```
interface FastEthernet0/1
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11
 switchport mode trunk
!
interface FastEthernet0/2
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11
 switchport mode trunk
!
interface FastEthernet0/3
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11
 switchport mode trunk
!
interface FastEthernet0/4
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11
 switchport mode trunk
!
interface FastEthernet0/5
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface Vlan5
 ip address 5.5.5.1 255.255.255.0
 no shutdown
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
End
```

**Switch 2 Configuration**

```
hostname S2
!
vtp mode transparent
ip subnet-zero
!
vlan 5,10-11,18
!
interface FastEthernet0/1
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11,18
 switchport mode access
!
interface FastEthernet0/2
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11,18
 switchport mode access
!
interface FastEthernet0/3
 switchport trunk encapsulation dot1q
```

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```
 switchport trunk allowed vlan 5,10,11,18
 switchport mode access
 !
interface FastEthernet0/4
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11,18
 switchport mode access
!
interface FastEthernet0/7
switchport trunk encapsulation dot1q
 switchport trunk native vlan 10
 switchport mode trunk
!
interface FastEthernet0/11
 switchport access vlan 11
 switchport mode access
 switchport port-security mac-address sticky
 switchport port-security mac-address sticky 0336.5b1e.33fa
!
interface FastEthernet0/18
 switchport access vlan 18
 switchport mode access
 switchport port-security
 switchport port-security mac-address sticky
 switchport port-security mac-address sticky 022c.ab13.22fb
!
interface Vlan1
 no ip address
 shutdown
!
interface Vlan5
 ip address 5.5.5.2 255.255.255.0
 no shutdown
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
End
```

### Switch 3 Configuration

```
hostname S3
!
vtp mode transparent
!
vlan 5,10-11,18
!
interface FastEthernet0/1
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11,18
 switchport mode trunk
!
interface FastEthernet0/2
 switchport trunk encapsulation dot1q
```

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```
 switchport trunk allowed vlan 5,10,11,18
 switchport mode trunk
!
interface FastEthernet0/3
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11,18
 switchport mode trunk
!
interface FastEthernet0/4
 switchport trunk encapsulation dot1q
 switchport trunk allowed vlan 5,10,11,18
 switchport mode trunk
!
interface FastEthernet0/7
 switchport trunk encapsulation dot1q
 switchport mode trunk
!
interface Vlan1
 no ip address
 no ip route-cache
!
interface Vlan5
 ip address 6.6.6.3 255.255.255.0
 no shutdown
!
line con 0
 exec-timeout 0 0
 logging synchronous
!
end
```

## Wireless Router Network Requirements

While troubleshooting WRS2 and WRS3, ensure that at least the following capabilities exist:

1. Connections via the IP addresses shown in the topology diagram.
2. More than 30 clients can get an IP address through DHCP at a single time.
3. A client can have a DHCP address for at least 2 hours.
4. Clients using both B and G wireless network modes can connect, but N clients cannot.
5. Wireless clients must be authenticated using WEP with a key of 5655545251.
6. Traffic between PC2 and PC3 must take the most efficient route possible.
7. Ping requests coming from outside WAN ports of the Linksys routers to their inside LAN/wireless IP addresses (192.168.30.1) must be successful.
8. DHCP must not give out IP addresses in a range that includes the addresses for PC2 and PC3.
9. The two wireless networks must not interfere with each other.

## Wireless Network Solution

Record your solution below.

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